

REMARKS

Claims 1-4 have been canceled. Claims 5-13 remain pending in the application.

Applicants amend claims 1 and 9 for further clarification. No new matter has been added.

The Examiner objected to claim 9 for the apparent informality of not including “for” for “means” features. Applicants amend claim 9 to remove the “means” terms, and respectfully request that the Examiner withdraw the objection.

Claims 5, 9, and 11 stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,937,574 to Delaney et al.; claims 5, 9, and 11 stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,611,872 to McCanne; and claims 6-8, 10, and 12-13 were rejected under 35 U.S.C. § 103(a) as being unpatentable over McCanne in view of U.S. Patent No. 6,438,612 to Ylonen et al. Applicants amend claims 5 and 9 in a good faith effort to clarify the invention as distinguished from the cited references, and respectfully traverse the rejections.

The claimed invention includes first relaying apparatuses having virtual relaying structure, exemplary embodiments of which are illustrated by virtual routers VPN1-VR1, VPN1-VR2, VPN2-VR1, VPN2-VR2 shown in Fig. 1 of the application. The virtual relaying structure generates and multicasts control packets each destined to a multicast address assigned to the virtual relaying structure. And each control packet contains a unicast address specific to the virtual relaying structure. As to “unicast address,” as described in paragraphs [0063] and [0118] of the specification, various tunneling techniques can be used for the establishment of a virtual link using a “unicast address,” and not a multicast address.

The claimed invention also includes second relaying apparatuses having virtual relaying structure, which receives the control packets from the first relaying apparatuses with the multicast address. The virtual relaying structure of the second relaying apparatuses establishes unicast virtual links using the unicast address in the control packets with the

virtual relaying structure of the first relaying apparatuses, which are transmitting sources of the control packets, and returns reply packets to the first relaying apparatuses through the virtual links.

Resultantly, a virtual private network is constructed with the virtual relaying structure specific to a same multicast address in the first and the second relaying apparatuses, through the unicast virtual links established between all pairs of the virtual relaying structure, and virtual interfaces receive packets from outside a public data communication network. Please see, e.g., Fig. 20 and paragraphs [0115]-[0117] of the specification.

Neither Delaney et al. nor McCanne, as cited and relied upon by the Examiner, discloses,

“[a] virtual private network construction system for a public data communication network comprising:

first relaying apparatuses with virtual relaying structure generating and multicasting control packets each of which is destined to a multicast address assigned to the virtual relaying structure and contains a unicast address specific to the virtual relaying structure, and

second relaying apparatuses with virtual relaying structure, which receives the control packets from the first relaying apparatuses with the multicast address, establishing unicast virtual links using the unicast address in the control packets with the first relaying apparatuses which are transmitting sources of the control packets and returning reply packets to the first relaying apparatuses through the virtual links,

whereby a virtual private network is constructed with the virtual relaying structures that are specific to a same multicast address in the first and the second relaying apparatuses, with the unicast virtual links established between all pairs of virtual relaying structures and with virtual interfaces receiving packets from outside the public data communication network,” as recited in claim 5. (Emphasis added)

Accordingly, Applicants respectfully submit that claim 5 is patentable over Delaney et al. and McCanne for at least the foregoing reasons. Claim 9 incorporates features that

correspond to those of claim 5 cited above, and is, therefore, together with claim 11

dependent therefrom, patentable over the cited references for at least the same reasons.

The Examiner relied upon Ylonen et al. to specifically address the additional features recited in the dependent claims 6-8, 10, and 12-13. As such, the addition of this reference would still have failed to cure the above-described deficiencies of McCanne, even assuming, arguendo, that such an addition would have been obvious to one skilled in the art at the time the claimed invention was made. Accordingly, Applicants respectfully submit that claims 6-8, 10, and 12-13, which depend from claims 5 and 9, respectively, are patentable over the cited references for at least the above-stated reasons.

In view of the remarks set forth above, this application is in condition for allowance which action is respectfully requested. However, if for any reason the Examiner should consider this application not to be in condition for allowance, the Examiner is respectfully requested to telephone the undersigned attorney at the number listed below prior to issuing a further Action.

Any fee due with this paper may be charged to Deposit Account No. 50-1290.

Respectfully submitted,

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